



**Tshwane University  
of Technology**

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**YEAR:** 2017

**EXAMINATION:** B

**May Supplementary**

**SUBJECT NAME:**

DEVELOPMENT SOFTWARE IV

**SUBJECT CODE:**

DSO401T

**QUALIFICATION(S):**

BTech: IT: Software Development (BTIS05)

**PAPER DESCRIPTION:** Computer-based

**DURATION:** 4 Hrs

**PAPER:** Only

**SPECIAL REQUIREMENTS**

☒

NONE

☐

NON-PROGRAMMABLE POCKET CALCULATOR

☐

SCIENTIFIC CALCULATOR

☐

COMPUTER ANSWER SHEET

☐

GRAPH PAPER

☐

DRAWING INSTRUMENTS

**OTHER:**

Database sample table description

**INSTRUCTIONS TO CANDIDATES:**

Submit your question paper to the examiner / invigilator(s) after the examination with your student#, name and PC# clearly written on it.

**TOTAL NUMBER OF PAGES INCLUDING COVER PAGE:** 4

**TOTAL NUMBER OF ANNEXURES:**

**EXAMINER:** SA Odunaïke / T Strydom

**FULL MARKS:** 100

**MODERATOR:** A Dandadzi

**TOTAL MARKS:** 100



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## Question 1

[45]

Create a set of stored procedures and functions required to display aircraft and charter trips information as required by the following:

- 1.1 Design a PL/SQL stored procedure block that will accept a given aircraft identification number. The block will display the aircraft information as well as model, series, manufacturer and fuel capacity information as shown in the sample output below: (10)

**Aircraft Information:**

**Aircraft model code: C-90A**

**Aircraft Type: C**

**Aircraft series: 90A**

**Manufacturer: Beechcraft**

**Model name: KingAir**

**No of seat: 8**

**Date of 100th Hours: 12-SEP-03**

**Fuel capacity: 66Litres**

- 1.2 Construct another PL/SQL stored procedure that will accept the same aircraft identification number as in 1.1 above, extract and display all the charter flights undertaken by this aircraft as shown below: (15)

**Aircraft Charter summary:**

S/No.	Trip#	Date	Pilot	Co-pilot	Distance	Customer
1.	9422	12-MAR-03	Ms. Travis	N/A	895	Ms. Dunne,L.K
2.	9426	17-MAR-03	Ms. Lewis	N/A	1522	Mr. Olowski,P.F
3.	9430	22-MAR-03	Ms. Lewis	105	455	Mr. Orlando,M.
4.	9433	25-MAR-03	Mrs. Duzak	N/A	806	Mr. Brown,J.G
5.	9436	28-MAR-03	Mr. Lange	N/A	512	Mr. Williams,G.
6.	9440	02-APR-03	Mr. Lange	N/A	348	Mr. Orlando,M.
7.	9445	08-APR-03	Mr. Williams	N/A	385	Ms. Smith,O.K
8.	9447	10-APR-03	Ms. Travis	N/A	874	Mr. Williams,G.
9.	9450	14-MAY-03	Mr. Williams	N/A	315	Ms. Smith,K.W
10.	9455	22-MAY-03	Mr. Lange	109	1701	Mr. Williams,G.

**No of chartered:10**

- 1.3 Develop a PL/SQL stored function that will accept the aircraft identification number as in 1.1 above, extracts and displays the total number of chartered flight undertaken by this aircraft as depicted below: [7]

**Total chartered distance: 7813**

- 1.4 Design an anonymous PL/SQL block that will integrate and call all the stored procedures and function as specified in questions 1.1 through 1.3 above. Make provision to handle data error exception. [13]

**Enter value for aircharter\_craftno: 4278Y**

**Aircraft Information:**

**Aircraft model code: PA31-350**

**Aircraft Type: PA31**

**Aircraft series: 350**

**Manufacturer: Piper**

**Model name: Navajo Chieftain**

**No of seat: 10**

**Date of 100th Hours: 02-OCT-03**

**Fuel capacity: 40Litres**

**Aircraft Charter summary:**

S/No.	Trip#	Date	Pilot	Co-pilot	Distance	Customer
1.	9423	13-MAR-03	Mrs. Duzak	104	486	Ms. Smith,K.W
2.	9427	19-MAR-03	Ms. Travis	N/A	842	Dr. Ramas,A.A
3.	9432	24-MAR-03	Ms. Travis	101	687	Mrs. Farriss,A.G
4.	9437	30-MAR-03	Mrs. Duzak	101	1623	Ms. Smith,O.K
5.	9441	03-APR-03	Mrs. Duzak	N/A	1011	Ms. Dunne,L.K
6.	9444	06-APR-03	Mr. Lange	N/A	965	Mr. Brown,J.G
7.	9449	13-MAY-03	Mr. Lange	109	397	Mr. Orlando,M.
8.	9453	18-APR-03	Ms. Lewis	N/A	978	Mr. Brown,J.G

**No of chartered:8**

**Total chartered distance: 6989**

## Question 2

[15]

Create a PL/SQL package and body called PILOT\_QUERY that uses overloaded procedures to display pilot information. The first query definition of the overloaded procedure requires the user to provide pilot identification number as parameter to the procedure. Whereas, the second definition of the overloaded procedure requires the user to provides pilot identification number and the license code as parameters to the procedure.

<b>Pilot_staffno: 101</b> <b>The Pilot: Ms. Lewis, R.G</b> <b>The first name: Rhonda</b> <b>Pilot Licence: ATP-Airline Transport Pilot</b> <b>Age: 52</b> <b>Years of Experience: 31</b>	<b>Pilot_staffno: 109</b> <b>The Pilot: Ms. Travis, E.K</b> <b>The first name: Elizabeth</b> <b>Pilot Licence: COM-Commercial Pilot</b> <b>Age: 56</b> <b>Years of Experience: 28</b>
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### Question 3

[20]

Create a procedure that will accept three (3) parameters (file directory, file name and customer identification number). The block generates a text file report of a given customer and the summary of charter trips booked and the pilot information (see sample output below). Make provisions to handle errors resulting from the use of UTF\_FILE package and construct the block using explicit cursor with WHILE loop.

#### Customer Data

**Date of Report: 25-FEB-08**

**Customer\_no: 10011**

**Customer:Ms. Dunne, L,K**

**5467 Lake View Dr.**

**Murfreesboro**

**TN (37130)**

**(615)-894-1238**

#### Summary of Charter Flights:

S/No.	Trip#	Date	Pilot
1.	9422	12-MAR-03	Ms. Travis
2.	9425	16-MAR-03	Mr. Lange
3.	9431	23-MAR-03	Mr. Lange
4.	9441	03-APR-03	Mrs. Duzak
5.	9451	15-MAY-03	Mrs. Duzak

**No of Chartered Flight: 5**

**\*\*\* END OF REPORT \*\*\***

### Question 4

[20]

Write a trigger CHECK\_TRANS\_DETAILS to ensure that new transaction payment details conform to certain guidelines and rules set out by the management. The trigger should raise application errors 20600 with appropriate message in the following instances when there is insertion or update of records:

- A payment transaction must have a valid customer and a valid trip number.
- The payment date must be today